

**METHODS AND SYSTEMS FOR USER MEDIA INTEROPERABILITY**  
**WITH DATA INTEGRITY**

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ABSTRACT

Systems and methods are provided for multi-application user media such as smart cards that can be used by users to obtain related benefits. Multiple applications of one type such as transportation may be implemented on user media from a standard or reference  
10 of that application type. Hierarchical networks and data structures may be provided in implementing user media. Data integrity features may be implemented by, for example, implementing anti-tearing features. Data groups may be classified into fixed and dynamic data groups, wherein the dynamic data groups may be further subclassified into parallel, circular, and alternate data groups to apply anti-tearing differently, such as based on the type  
15 of data element involved. A valid record list may be implemented for tracking current valid information.